



Who says we can't fly?

*Two pilots with diabetes
have set a new world speed
record for flying around the
USA, as **Pat Malone** reports*

Douglas Cairns' life came crashing down one day in 1989 when he was diagnosed as having Type 1 diabetes. Flying was everything to him; as an instructor on Jet Provosts at Linton-on-Ouse it was not only his passion but his profession, and he found himself grounded, without a job and – in theory at least – medically disabled.

Today, 20 years on, Douglas and his co-pilot James D'Arcy have set a world speed record for flying to every one of the 48 contiguous states of America in a project called Diabetes Flight 48, which not only provides a beacon for other pilots with diabetes but was a hell of a lot of fun. Both pilots have insulin-dependent diabetes, and both control it with a medical regime that satisfies the FAA. More countries are becoming enlightened about diabetes and flying – AOPA fought hard and successfully to allow flight with certain types of diabetes under the NPPL, and Australia and Israel also make concessions. Canada even allows commercial flying in two-crew operations, and solo flying in day VFR. With demonstrations like Diabetes Flight 48, more countries must soon see the light.

It's difficult to understate how much losing the right to fly means to people like Douglas Cairns and James D'Arcy. Similarly, winning that right back provides the kind of lift that few of us will experience in life. Since returning to the air, Douglas has been almost obsessive about making up for lost time, while showing the world that pilots with diabetes can be as safe in the air as those without. DF48 is only the latest project, and there will be more. "I've

got the bit between my teeth," says Douglas. "I'm making up for all the lost time since being diagnosed 20 years ago, and diabetes awareness-raising is a great reason to go flying!"

When Douglas first lost his licence, no country in the world allowed flying with Type 1 diabetes – the insulin-dependent type – due to the risk of low blood sugar reactions. In 1997 the US introduced a system for flying with diabetes, both Type 1, and Type 2 where it also required the use of insulin; a special-issue third class medical which required the applicant to demonstrate good overall diabetes control. If and when the third class medical was issued, in order to ensure safe flying, blood sugars had to be tested 30 minutes before take off, each hour in flight, and 30 minutes before landing. Since gaining his US PPL on this basis nine years ago Douglas has flown 2,400 hours and has demonstrated the US system to be safe and effective.

He plunged back into aviation with a will; his first major project, Diabetes World Flight, set five US city-to-city world speed records and two transcontinental records. This year, DF48 had a go at the ten-year-old record for landing in all states except Alaska and Hawaii. His flights have so far raised £35,000 for diabetes research – read on, because there'll be a website URL at the end where you can help out here...

"A prime purpose is to highlight the fact that diabetes need not limit the scope of people's dreams and ambitions," says Douglas. "So many restrictions exist for flying with diabetes,

Above: back in the saddle - Douglas Cairns in the left seat

but we have shown that the US system for flying with diabetes is effective and safe, and hopefully, other aviation authorities can consider adopting similar systems. Diabetes management technology continues to advance, and I currently use a continuous blood glucose monitor, giving blood sugar readings every five minutes, on top of the hourly requirement."

Douglas has used the same Beech Baron B58 for his diabetes awareness flights. "It's an excellent aircraft for record-breaking, with 180 kts cruise and 5.5 hours endurance," he says. "However, with five people on board, food and drink provisions, maps, approach plates for the whole USA, spare vacuum pump and alternator, we had to reduce fuel to remain within weight limits and then had just over four hours cruise plus IFR reserves."

There were five people on board – Douglas, James D'Arcy (who hadn't flown for five years until DF48), Karl Beetson, who also has Type 1 diabetes and is mad keen on flying, Dave the cameraman and Daniel the National Aeronautics Association observer who was not only official record-keeper but was six-foot-five. Karl's responsibility was to maintain the Spidertracks GPS tracker specified by the NAA to testify that they'd landed in all 48 states.

Preparations included a 100-hour check for the Baron, fixed autopilot, microphone and headset jacks in back for the extra crew,

installation on control column a Garmin 396 with XM WX information, which Douglas says was invaluable. "We could see where bad weather was, and saved ourselves from landing short and filing IFR, such as when the G396 metar info highlighted clearing conditions as we tracked north along New Jersey's coastline and were able to fly on to Connecticut, refuel and continue VFR without IFR routing and delays."

Planning the route was a very basic exercise of eyeballing maps of the USA and projecting lines on VFR charts to work out where to land, while retaining flexibility to cope with contingencies. Decals were stuck on the plane, and the crew had to be got to Council Bluffs, Iowa, for the start. James got his medical exactly a week before the flight started, and his revalidation check ride was the day before he flew to the USA, which was cutting it fine.

As PIC, Douglas was responsible for all the navigation, en-route diversions and forward planning. It was his hope to complete the whole flight VFR to avoid IFR routing delays, and indeed they just managed it. A major difference from the previous diabetes awareness flight was the fact that DF48 was an endurance flight, and they would have to battle through or around bad weather rather than wait it all out.

It was, says Douglas, an interesting and enjoyable flight. "It was a matter of continuous concentration on the flying job at hand, battling with bad weather – we were delayed by one day as low IFR and embedded CBs remained over the Dakotas and Montana, so we headed south west to Texas and then westwards to intercept a clockwise race-track pattern around the USA, instead of the planned counterclockwise pattern, initially heading north west to Washington.

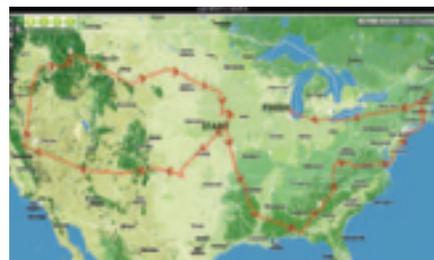
"It was a tremendous experience, in its intensity and in the grandeur of the USA, the prairies, the Rocky Mountains, the desert



Top: the crew flew almost 46 hours in four days in their Beech Baron

Above: the planned route, and the actual route after contingency diversions

Below: well-organised flight planning on the floor of a hotel lounge



morphology, the Grand Canyon, surreal night flying in Iowa with lightning all around – James and I have absolutely relished getting our licenses back, and of course there were five of us in the plane with a lot of good banter flying around.

"We averaged five and a half hours' sleep a day, overnighting in Reno Nevada, Carroll Iowa, Roanoke Virginia and Cleveland Ohio. We had to detour around bad weather in Montana, and severe storms with tornado warnings forced us down twice, on night two in Iowa, and night four in Ohio. We would have finished at least 15 hours earlier had we not had bad weather to deal with.

"We continually re-planned as we went around, diverting several times. At each refuelling James and I would take turns to get FSS briefings for onward flight, and we swapped left seat each time. I had to do all night landings as James was out of currency. On the third night we had thick fog covering a huge area and we throttled back to conserve fuel in case we had to go hunting for non-fogged alternates. Luck was with us that night as the runways had retained heat from the daytime, which prevented fog forming immediately above when all around was blanketed.

"Average flying each day was 11 hours, with 45.8 hours logged in total. There was no time for rest on the ground – it was a blur of continued planning and re-planning. We landed at Class C airports for night stops so the FBOs could arrange hotels for us.

"Stressful moments included diverting to avoid severe storms at night in Iowa, watching storms rapidly expand around us and cut off our escape route to Des Moines – we were originally landing back at Council Bluffs but were beaten back by the storms – and having to put down at tiny country airport Carroll, Iowa. Good luck prevailed here also as we had landed at an extremely rare airport where the FBO attendant lived in the terminal building,





Left: in-flight catering - Dave takes a lunch break
Above: diabetic pilot Butch Weaver's Cessna 310 off the Baron's wing
Below right: cameraman Dave and GPS man Karl not being sick
Bottom: some spectacular low flying in Utah's Monument Valley

and we were quickly hangared and driving into the local town four miles away just before a storm blew through. Four large waterfowl forced us to abort our third-last take-off in Indiana; it would have been frustrating to be knocked out by a birdstrike just as we were about to finish.

"The right engine rpm needle was dead on start up at Roanoke, but luckily (again), some repeated engine revving eventually coaxed it to life. In Texas, it got hot and bumpy as thermals rose into prevailing westerlies, and in Colorado we had strong westerlies eddying over the

Rockies. We did some formation flying with Butch Weaver, another Type 1 diabetes pilot, in his C310, which was fantastic fun for everybody except Daniel and Karl in the back, who hurled up enough to fill two sick bags! It was both hot and bumpy, and fortunately was the only place where anyone was sick."

Low flying, legal and safe, brought relief from what could have been a trudge at medium level. "I was keen to enjoy as much as we could," Douglas says. "We revelled at low level around Monument Valley and through some rocky escarpments close by. It was really



tremendous stuff – it'll be on the website once the DVD is loaded. We were also pretty low in Montana when we had to divert 100 miles north around stormy weather and had some great mountainsides to fly over. Further on there were Wyoming's Bighorn mountains, with green mountainside meadows to fly over and perpendicular steep-sided valleys to descend into. We also went low over South Dakota's Missouri River, and by Long Island, New York, over the Atlantic Ocean, shortly before reaching the New England states.

"Bad weather prevailed in the New England states for the whole four days, which is why we changed plan halfway through to do a figure-of-eight instead of a racetrack pattern, adding a good four hours to the record flight. We also had to fly low to land at Eastern Slopes in Maine, where stratus forced us down valleys in Class G airspace and a 400-foot cloud base over the airfield itself resulted in James doing a punchy right base turn directly onto the runway. In calm conditions, we had to turn around and take off in the opposite direction to avoid even lower cloud at the western end of the runway."

For the non-refuelling landings they had to



be on the ground for at least one minute for the Spidertracks to register their location, as required by the NAA. The quickest refuelling turnaround was 30 minutes, in Guymon, Oklahoma, on the first day.

And how about the diabetes control? Douglas says: "The blood sugar testing requirements become part of the cockpit procedures, allowing us to focus on the flying. Endurance flights like this can hopefully outline how well I believe the US system works for flying with diabetes, particularly as more advanced diabetes management

technology comes to market."

The DF48 record was ratified by the NAA at the end of August as having covered more than 7,000 miles and beaten the existing record by over 33 hours, at 97 hour, 32 minutes, 37 seconds elapsed time. Douglas is now planning more endurance-related record flights. over the next two summers.

*www.diabetesflight48.com has an important button marked 'donations' – money goes to the Juvenile Diabetes Research Foundation.

*www.pilotswithdiabetes.com is a new website designed to help get diabetics flying again. ■

Top: the Colorado River at the entrance to the Grand Canyon
Above: a well-earned celebration cake consumed after setting a new world record
Below: the crew with the Baron – from left, Daniel, Dave, Douglas, James and Karl

